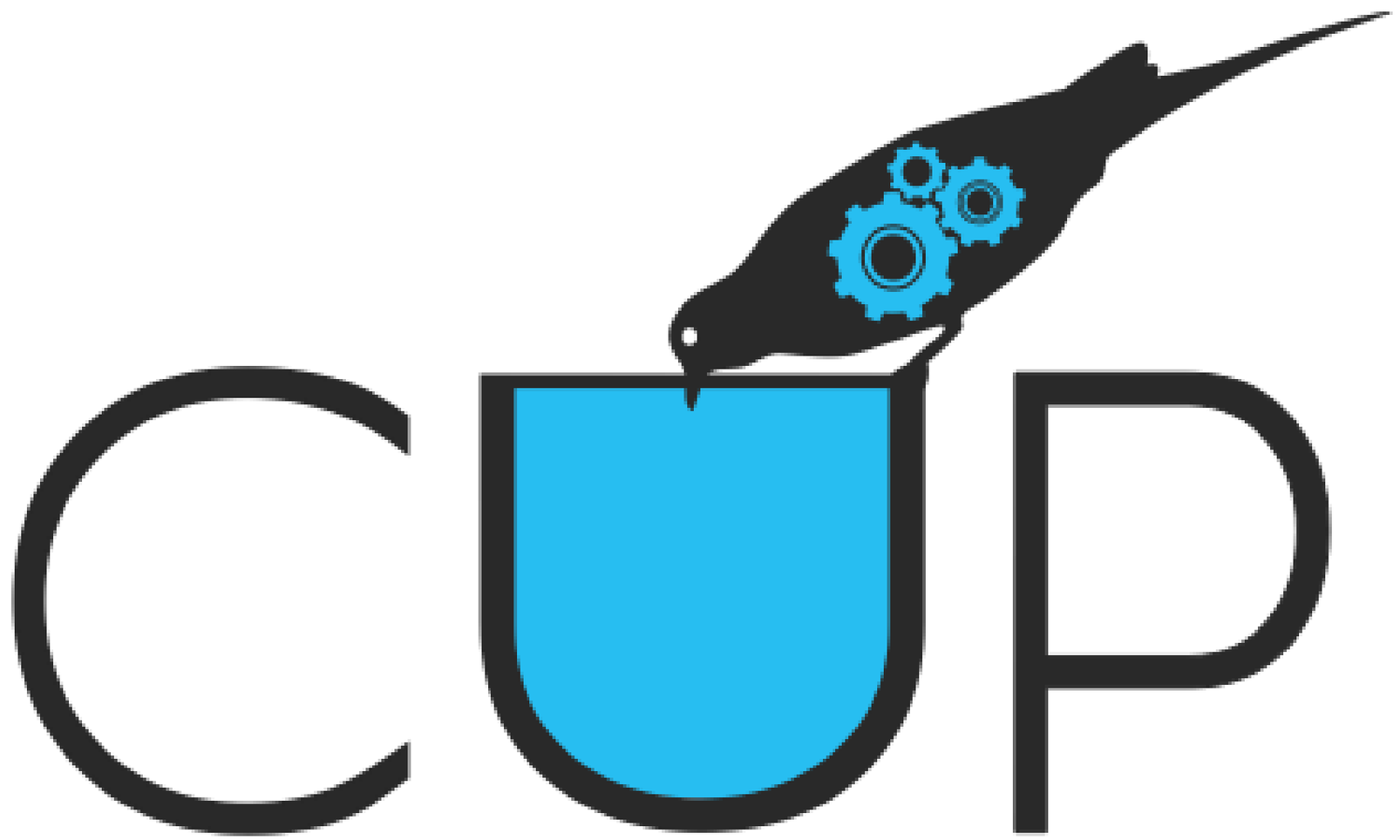

CUP
Creative Urban Projects

CABLE PROPELLED TRANSIT

When we talk about CABLE TRANSIT, we normally think of this...

image from flickr user willposh

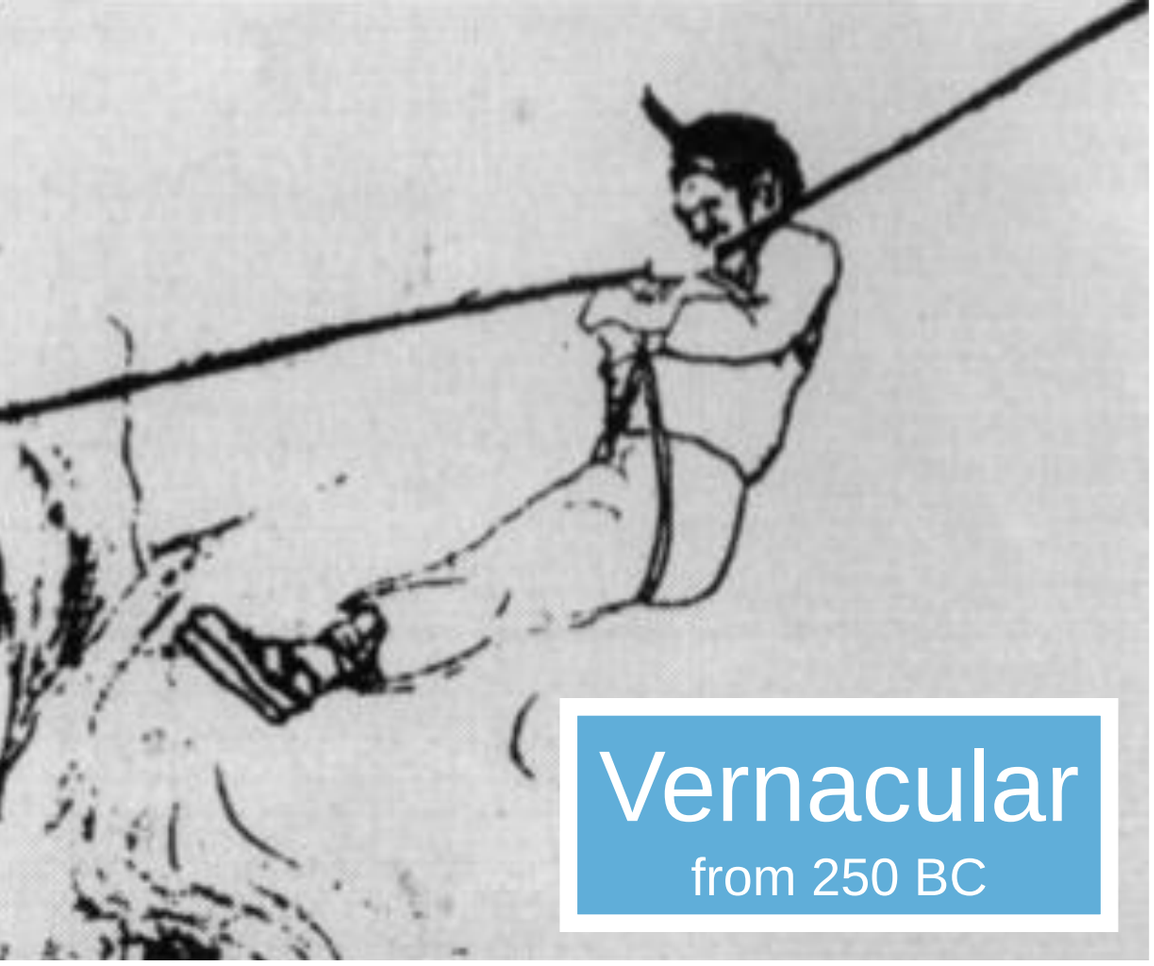
But it’s also this …

And this ...

image from flickr user //lucylu

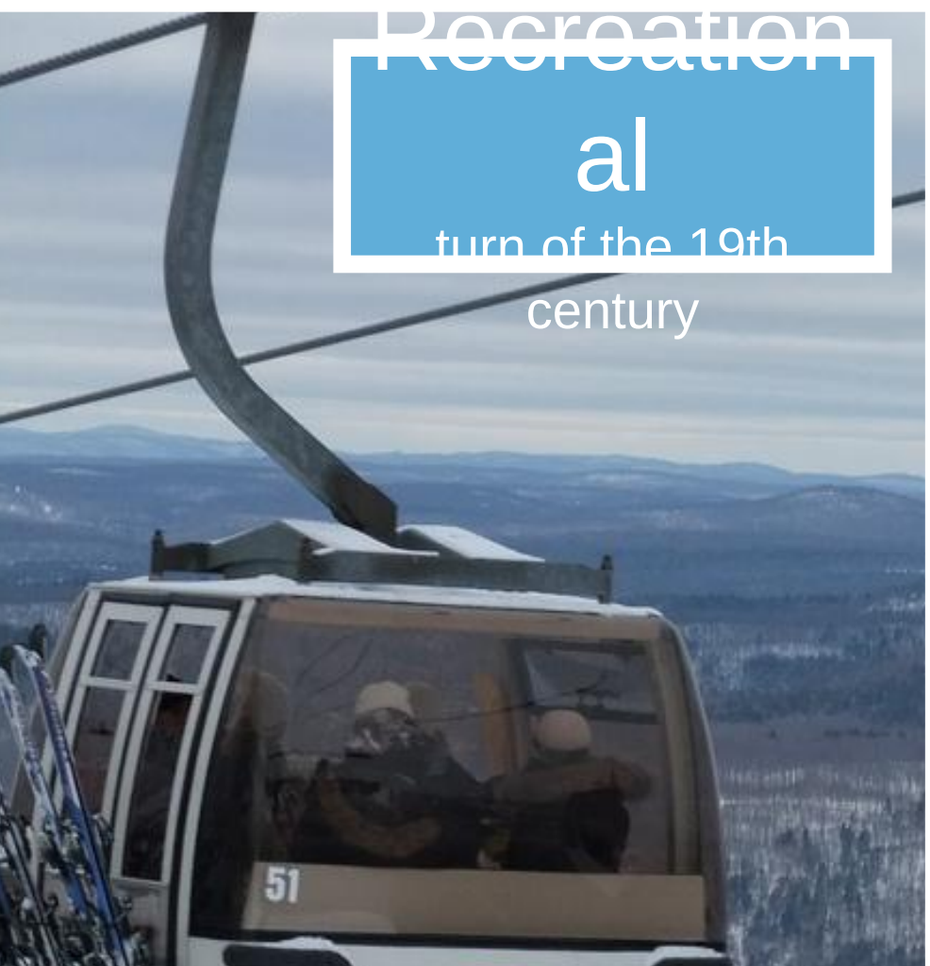
And this ...

image from flickr user macten



Vernacular
from 250 BC

Industrial
from 1834



Recreation al
turn of the 19th century

Urban
from 1976

Original Roosevelt Island Tram, 1976

- Originally a temporary installation
- Suffered from lack of full-integration
- Since full-integration in the mid-2000's, it quickly became the favoured mode of travel for Roosevelt Island residents
- Fully overhauled in 2010

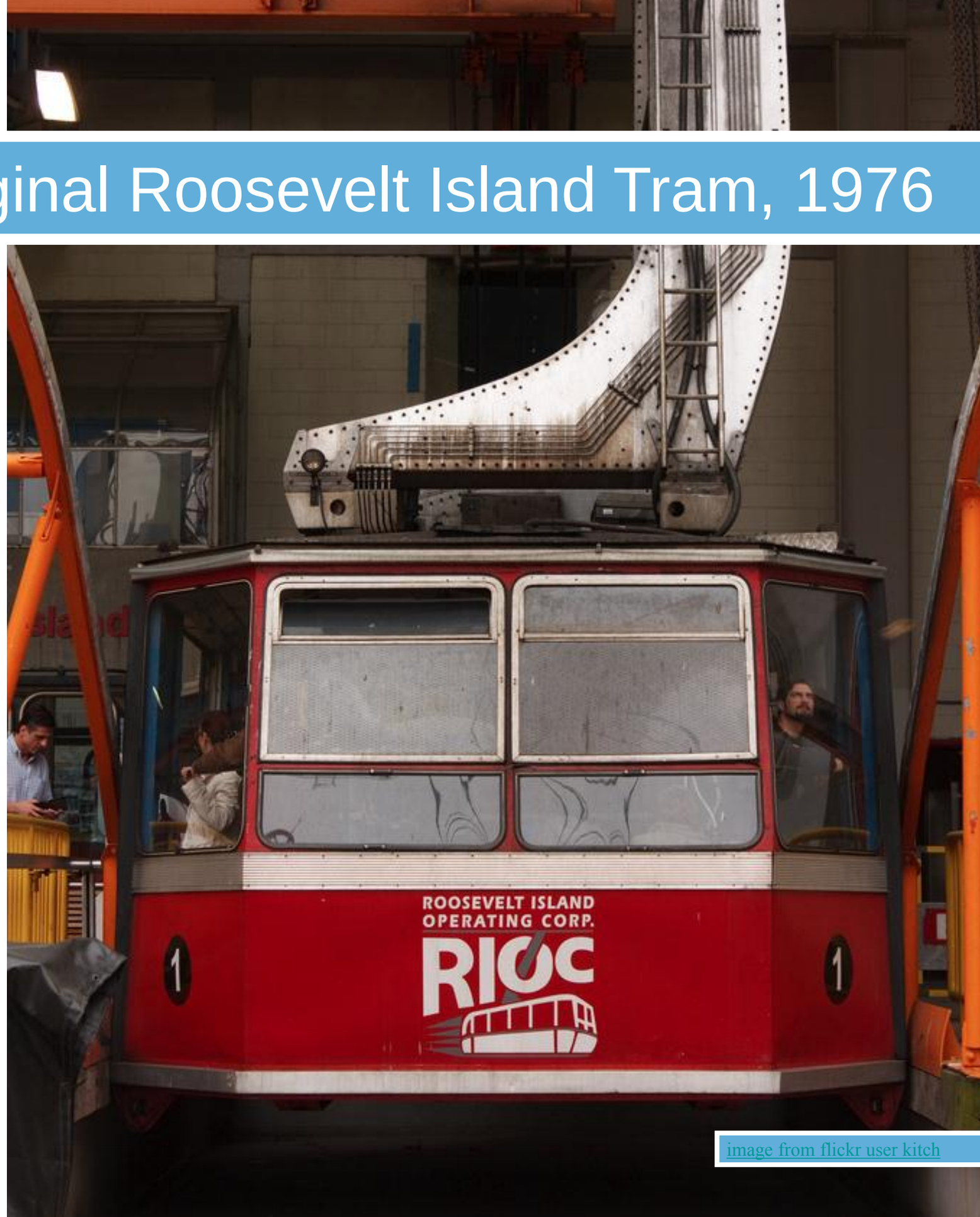


image from flickr user kitch

Medellín Metrocable - Linea K, 2004

- Directly inspired by Mount Avila
- World’s first fully-integrated (aerial)Cable Propelled Transit system
- ~ 2 km in length
- 3,000 pphpd
- ~$25m (US) all in
- 40,000 rides per day

Medellín Metrocable - Linea J, 2007/08

- Made possible by the tremendous success of Linea K
- ~ 3 km in length
- 3,000 pphpd
- ~$50m (US) all in
- Like Linea K, the system is partly responsible for massive social and community development

- Fully-integrated
- 3,000 pphpd
- $18m (US) for electro-mechanical
- Additional $300m (US) for community centre/station infrastructure - a point of confusion
- Two 90 degree turns
- 5 stations
- Plans for another 8 systems

Caracas Metrocable - San Augustin, 2010

Medellín Metrocable - Linea L, 2009

- Expansion of Linea K
- 5 km
- ~ $26m (US) all in
- Only 2 stations
- Meant to service nature preserve.
- Due to the nature of the system, a separate fare is required

Teleferico do Alemao - Rio, 2011

- Opened mid-2011
- ~ 3.4 km long
- 3 corners / turns
- 6 total stations - largest number ever.
- Borrows heavily from Caracas' social mandate.
- Second line already in planning stages

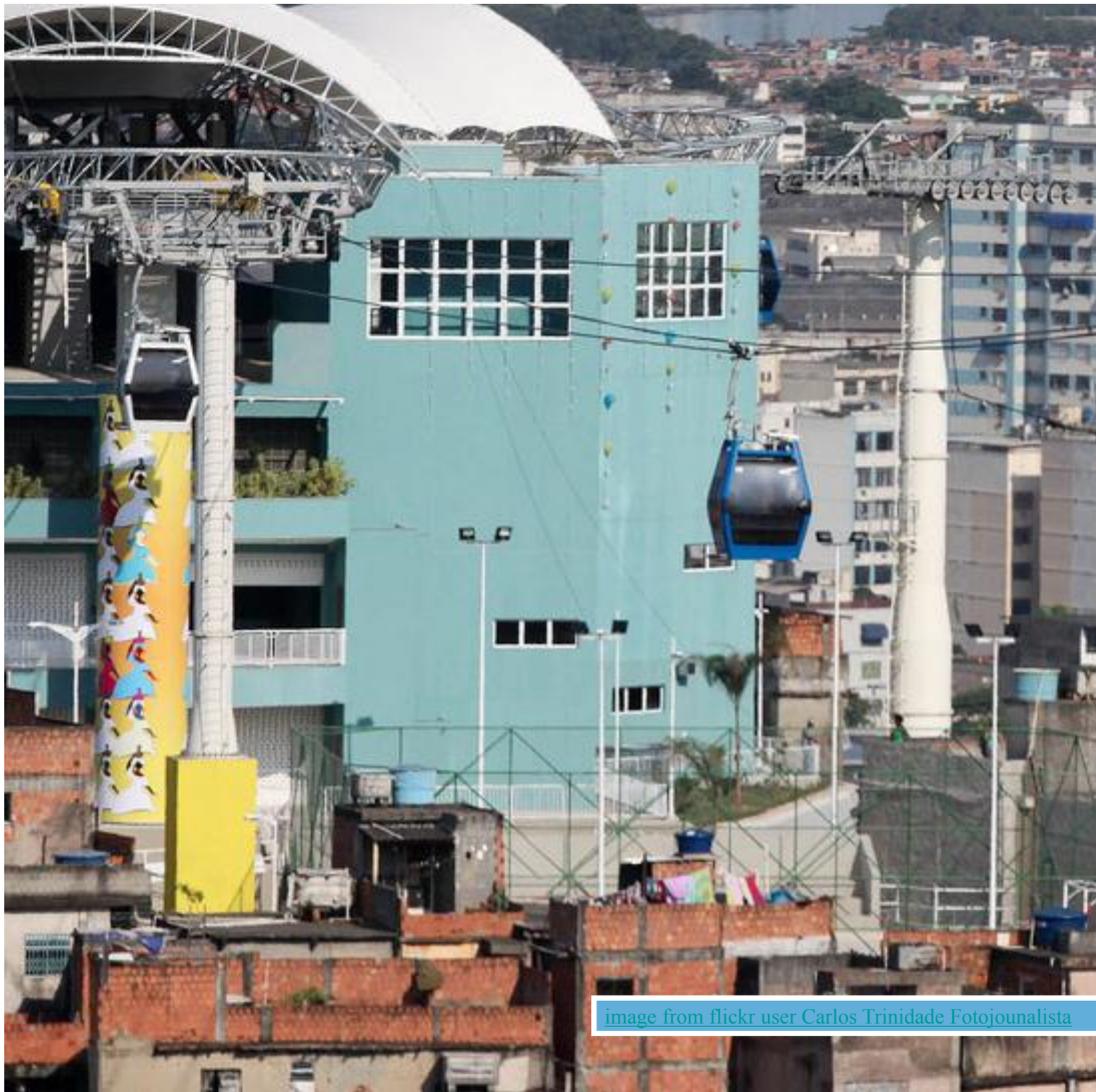


image from flickr user Carlos Trinidade Fotojounalista

Portland Aerial Tram, 2006

- Inspired by RIT
- Stunning, customized architectural design.
- Integrated physically, no integration by fare.
- $57 m (US) all in
- Ridership double forecasts
- 300 - 400% over budget depending upon estimates

image from flickr user compujeramey

New Roosevelt Island Tram, 2010

- A ‘funifor’ type system
- Allows for 24 hour, independent operation, easy O&M /evacuation procedures
- A clear step up from the Aerial Tram, but not as useful as a gondola

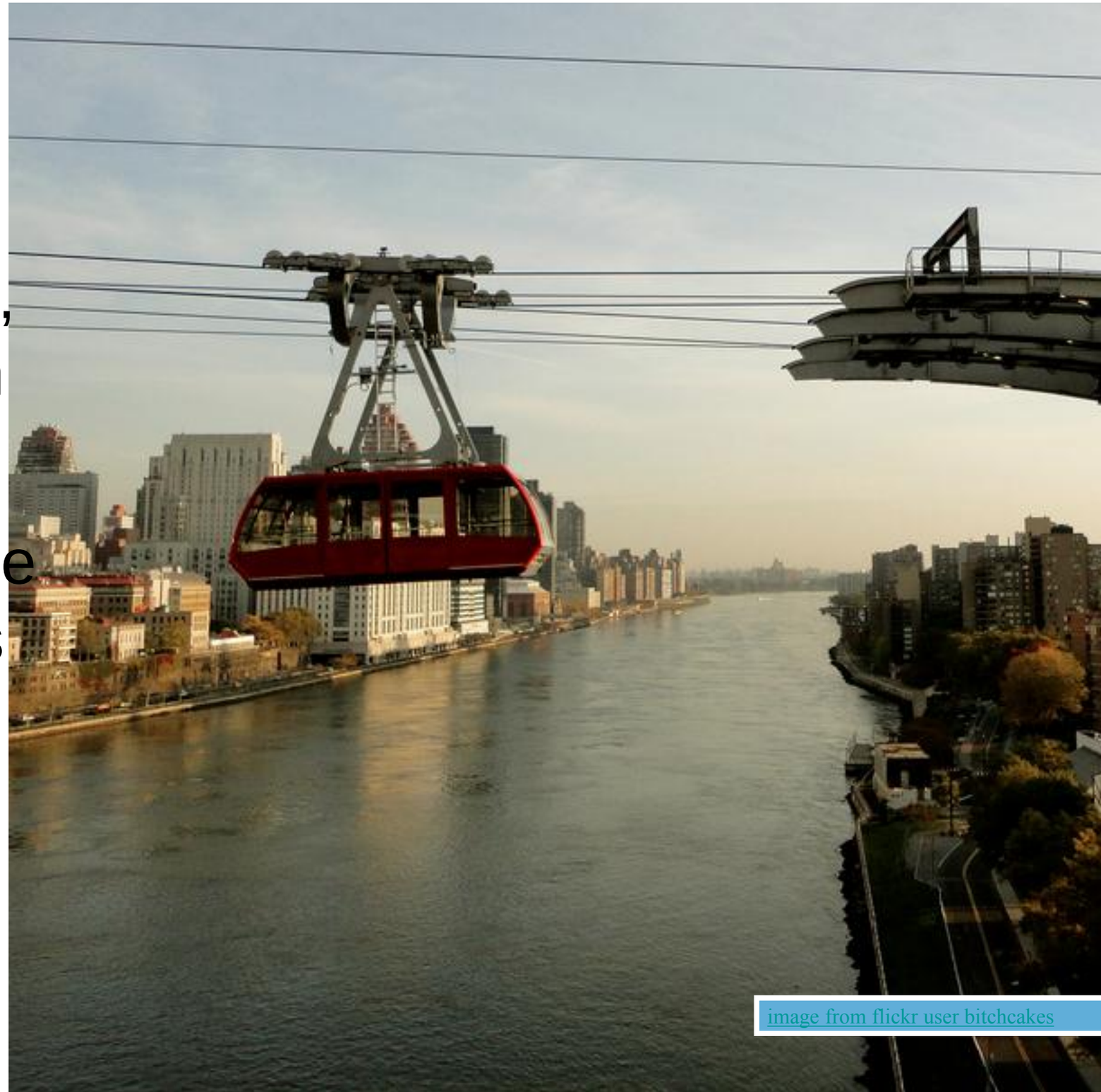


image from flickr user bitchcakes

Koblenz Rheinseilbahn, 2010

- Latest 3S technology - can carry up to ~ 8,000 pphpd
- A hybrid of Gondolas and Aerial Trams.
- Very slim-profile stations
- New “urban concept” vehicles
- ~ $25m US
- Can operate in winds above 100 km/hr

- Rebuild of an old bicable system (bicables generally no longer recommended)
- Unique VIP premium cabins
- Tourist installation
- Unique station configuration on the 15th floor of a skyscraper

Sentosa Island, Singapore - 2010

Bolzano 3S - 2009

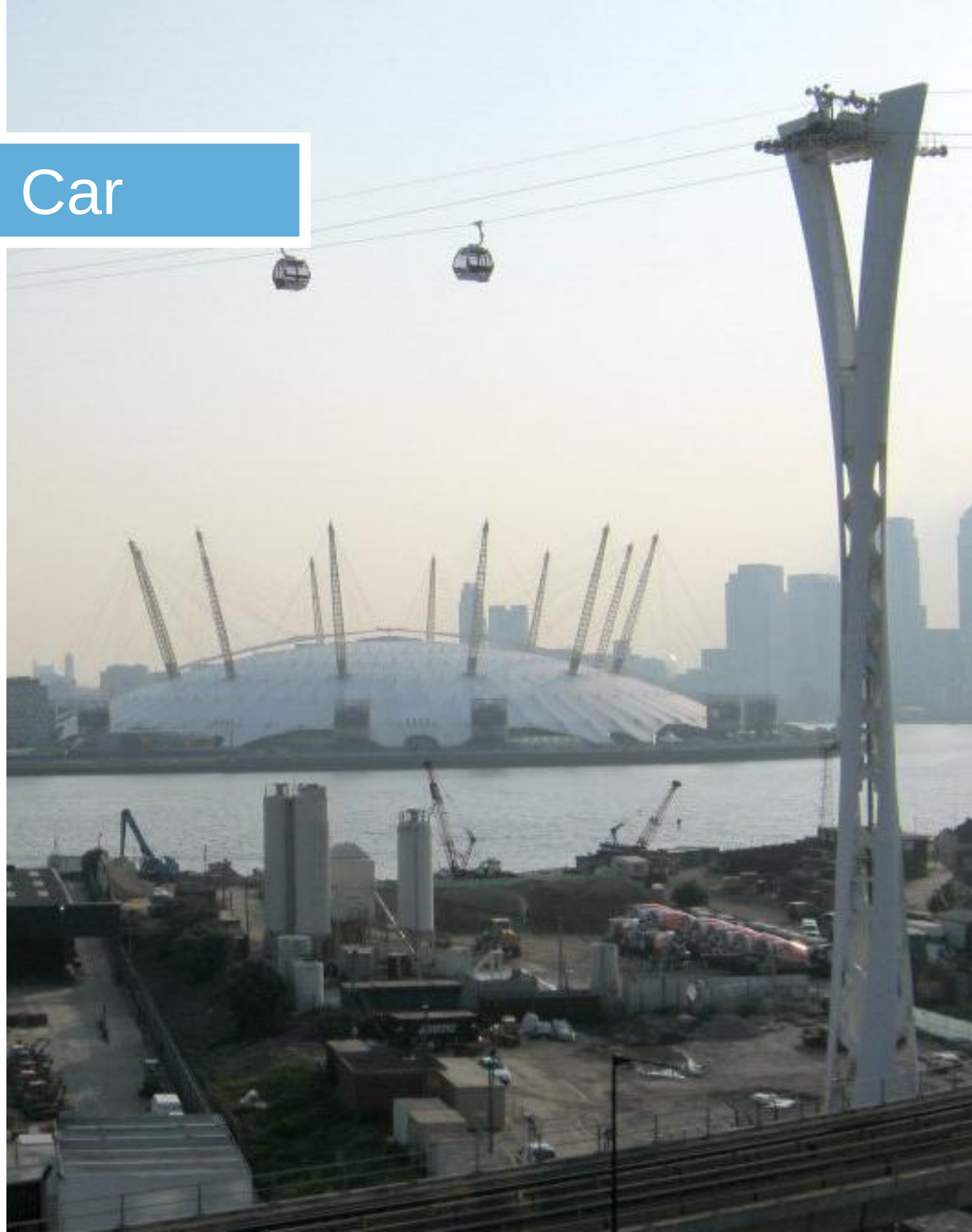
- Notable largely for its incredibly elegant station design.
- Station is perfectly integrated into the surrounding urban fabric
- Very slim-profile
- Almost invisible

Algerian Gondolas - last 5 years

- Much mystery
- Estimates range from 3 - 5 systems in operation across the country
- Full-integration
- Excellent blending of the technology with local, vernacular architecture

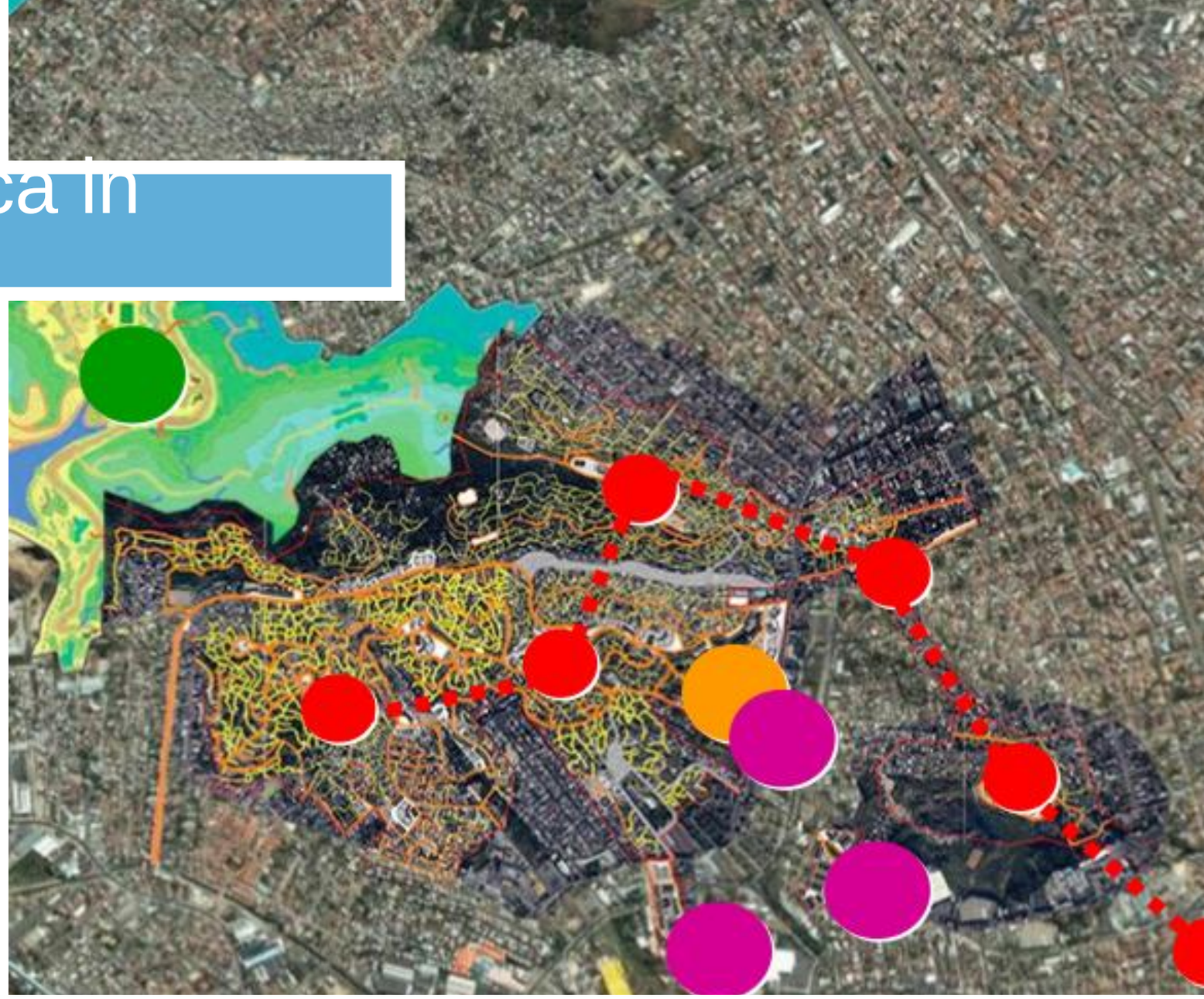
London Thames Cable Car

- Built for the 2012 Olympics
- Cheaper than bridging the Thames
- Controversy surrounding fare & price
- Positioned poorly as transit



Rio and South America in General

- Rio, Medellin and Caracas already planning and/or building new systems
- A recent study by CUP found over 57 systems in South America are being planned and/or built



Makkah, Saudi Arabia

- CUP is working with the University of Toronto Cities Centre to help design an “Aerial Rapid Transit” component of Makkah’s new transit plan.
- Spurred largely by the need to move millions of pilgrims during the Hajj

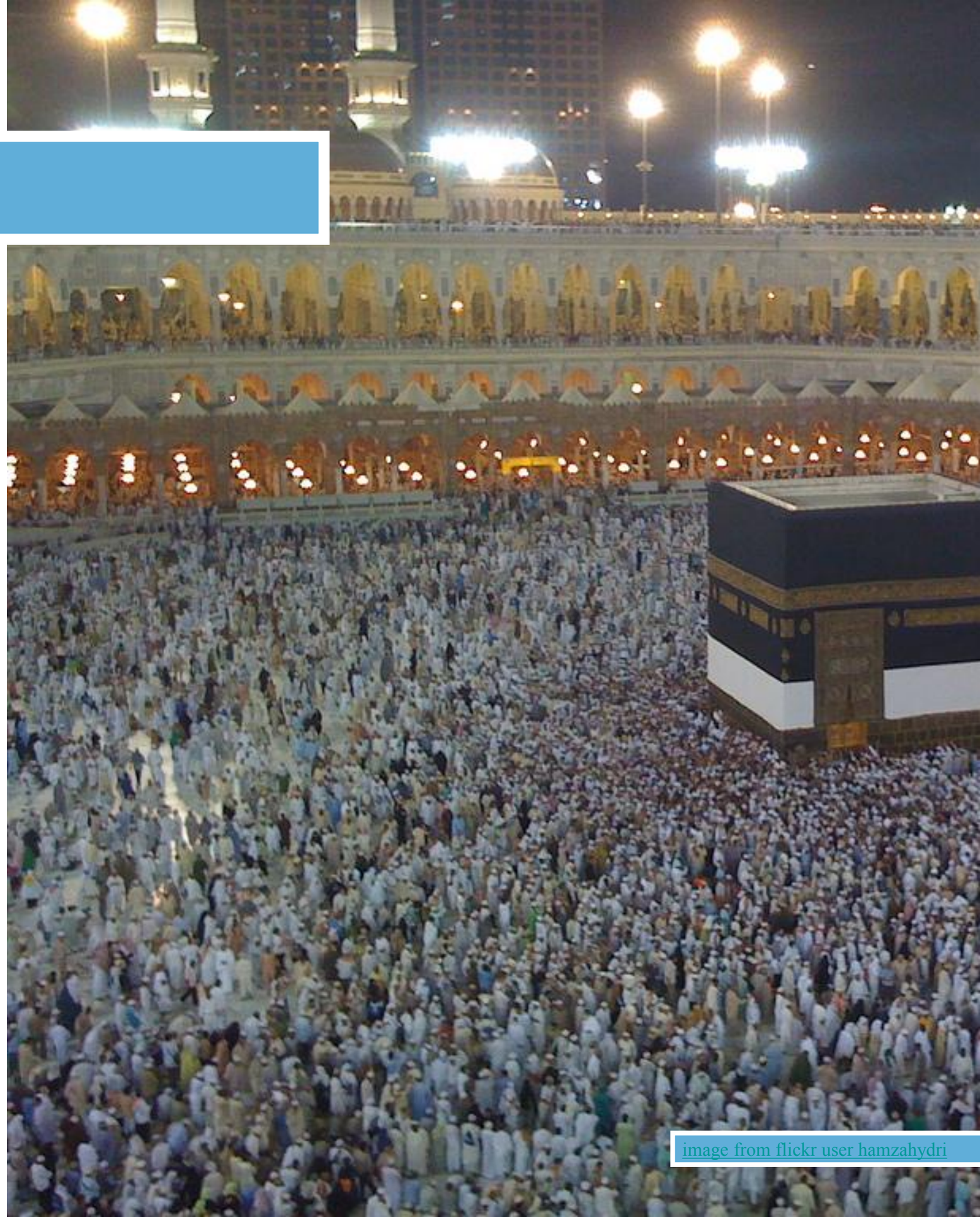


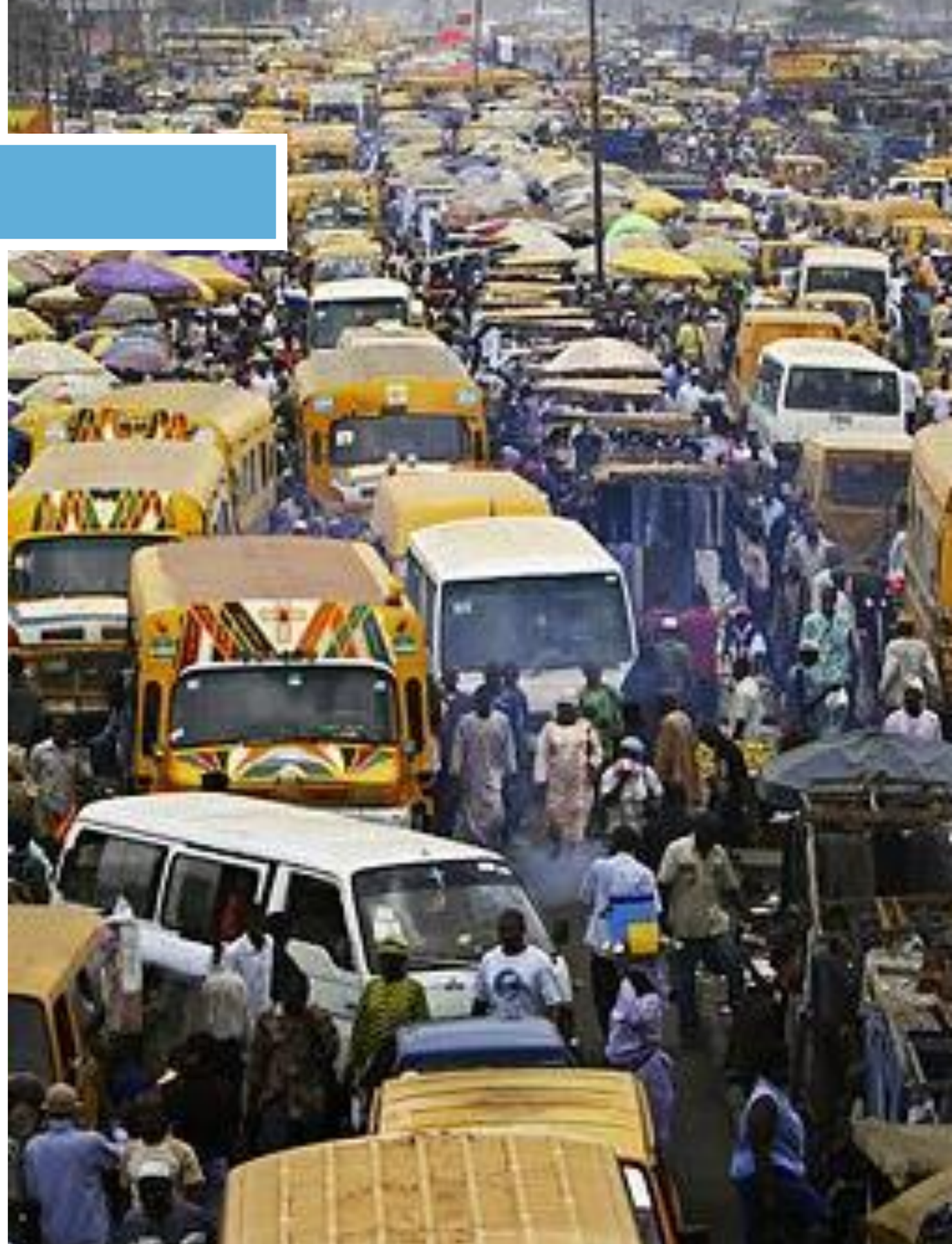
image from flickr user hamzahydri

Laval, Quebec

- Initial study by CUP to help inform STL about cable transit.
- Project has gone to feasibility.
- Would be the first fully-integrated system in the world not motivated by topographical challenges.

Lagos, Nigeria

- CUP conducted initial feasibility study to explore a network of gondolas in the central business district of Lagos.
- Study well-received and the project is now at the AfDB awaiting final funding.

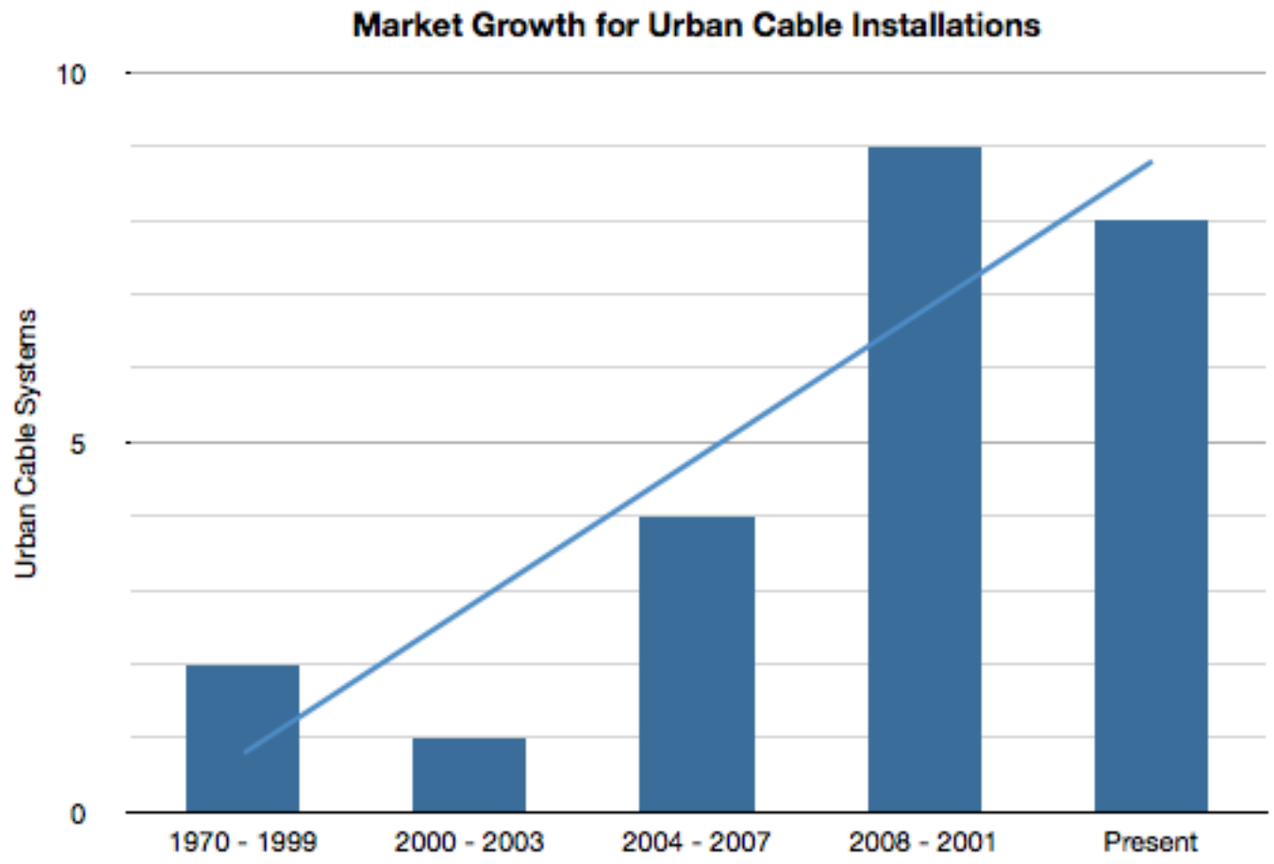


Vancouver, BC

- Initial feasibility study completed to connect Simon Fraser University to nearby skytrain station
- Unfunded
- Business Case completed. Some opposition.

image from flickr user jonwick04

What's Changed?



What's Changed?

- Studies in the 1990's demonstrate that the transit planning industry was completely misinformed about cable transit systems.

Gross Misunderstanding

Too expensive

Not fast enough

Difficult to procure

Not safe

Limited Capacity

No ability to corner

No ability to implement intermediary stations.

Gross Misunderstanding

Too expensive

Not fast enough

Difficult to procure

Not safe

Limited capacity

No ability to borrower

No ability to implement intermediary stations.

Koblenz

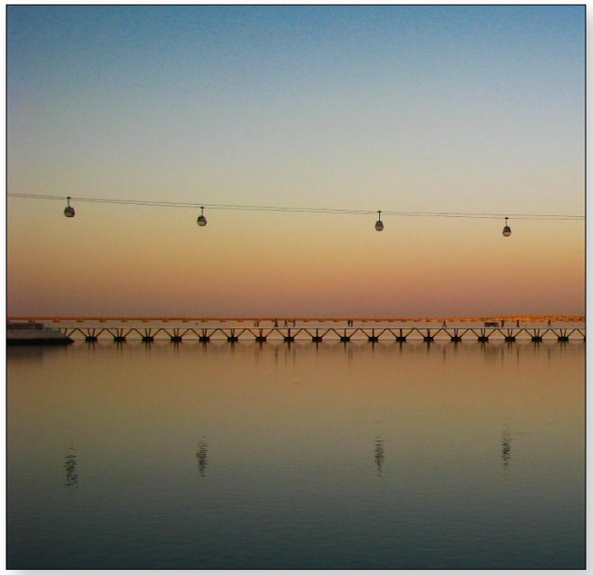
Caracas

London

Rio

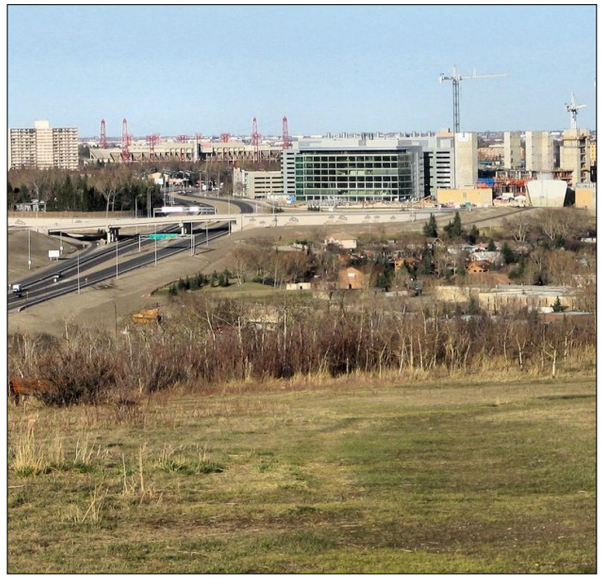
Venlo

New Systems

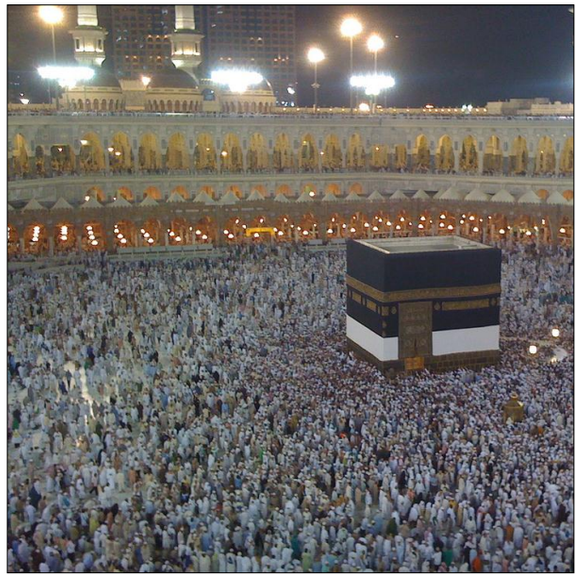


Singapore
Lisbon
NYC
Algeria
Medellin

Existing Systems



Calgary
Lagos
Makkah
Montreal
Hamburg



New Research

La Paz
Medellin
Caracas
Australia
Vancouver

Coming Systems

Why Be Afraid?

Over time, new ideas become familiar.

Thanks!